

COLLEGEWIDE COURSE OUTLINE OF RECORD

EECT 121, ELECTRONICS CIRCUIT ANALYSIS

COURSE TITLE: Electronics Circuit Analysis

COURSE NUMBER: EECT 121

PREREQUISITES: EECT 111 Introduction to Circuits Analysis, and MATH 137 Trigonometry with Analytic Geometry.

COREQUISITE: MATH 137 Trigonometry with Analytic Geometry.

SCHOOL: Technology

PROGRAM: Electronics and Computer Technology

CREDIT HOURS: 4

CONTACT HOURS: Lecture: 3 Lab: 2

DATE OF LAST REVISION: Spring, 2014

EFFECTIVE DATE OF THIS REVISION: Fall, 2014

CATALOG DESCRIPTION: Capacitors, inductors, switching circuits, transformers, rectifiers, linear regulators, dependent sources, operational amplifiers, BJT and MOSFET based small signal amplifiers, and waveform generation are studied. Circuit fundamentals such as Kirchhoff's laws are utilized in analysis and design circuits. Computer simulation is used.

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course, the student will be expected to:

1. Explain the characteristics of capacitors, inductors, rectifier diodes, Zener diodes, IC regulators, bipolar junction transistors (BJT's), field effect transistors (FET's), IC waveform generators, general purpose operational amplifiers, programmable analog IC's.
2. Apply the principles of circuit analysis to the following major electronic circuits: power supplies, op-amps, BJT and FET biasing, amplifier systems, wave shape generators, RC and RL switching circuits, and transformer circuits.
3. Simulate the above circuits and compare actual data and simulated data.
4. Construct electronic circuits according to a given schematic and make electrical measurements using digital multimeters, signal generators, and oscilloscopes.
5. Illustrate the role of mathematical models in electronics problem solving.
6. Interpret the data of laboratory experiments.

COURSE CONTENT: Topical areas of study include –

Capacitors

Switching circuits

Inductors

Transformers

Rectifiers

Linear regulators

Computer simulation

Utilize Ohm's and Kirchhoff's laws in the analysis and design of circuits

Dependant sources

Operational amplifiers

BJT small signal amplifier

FET small signal amplifier

Waveform generators

Programmable analog devices

HOW TO ACCESS THE IVY TECH COMMUNITY COLLEGE LIBRARY:

The Ivy Tech Library is available to students on- and off-campus, offering full text journals and books and other resources essential for course assignments. Go to <http://www.ivytech.edu/library/> and choose the link for your campus.

ACADEMIC HONESTY STATEMENT:

The College is committed to academic integrity in all its practices. The faculty value intellectual integrity and a high standard of academic conduct. Activities that violate academic integrity undermine the quality and diminish the value of educational achievement.

Cheating on papers, tests or other academic works is a violation of College rules. No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials and other academic work. This includes students who aid and abet as well as those who attempt such behavior.

COPYRIGHT STATEMENT:

Students shall adhere to the laws governing the use of copyrighted materials. They must insure that their activities comply with fair use and in no way infringe on the copyright or other proprietary rights of others and that the materials used and developed at Ivy Tech Community College contain nothing unlawful, unethical, or libelous and do not constitute any violation of any right of privacy.

ADA STATEMENT:

Ivy Tech Community College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. If you need an accommodation because of a documented disability, please contact the Office of Disability Support Services.

If you will require assistance during an emergency evacuation, notify your instructor immediately. Look for evacuation procedures posted in your classroom.